

Specifically, the Examiner has rejected claims 9,10,12 and 14-16 as being indefinite for using trademarks and/or trade names. In addition, the Examiner rejected claims 1-22 because of the recitation of the term 'purified water' and the term 'aging the composition'.

The Examiner further indicated that claims 1-22 were rejected under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 5,284,492 (Dubin) alone or in view of United States Patent No. 5,873,916 (Cemenska et al). The Examiner has also provisionally rejected claims 1-22 under the judicially created doctrine of double patenting over claims 1-19 of co-pending Application No. 09/109,028.

By this amendment, Applicants amend claims 1,9,10,12 and 14-16.

Rejections under 35 U.S.C. §112

In light of the rejections of claims 9,10,12, and 14-16 under 35 U.S.C. §112, second paragraph, Applicants have amended claims 9,10,12, and 14-16 solely to address the rejections under 35 U.S.C. §112, second paragraph. Accordingly, such rejections under 35 U.S.C. §112, second paragraph, are now moot.

Applicants respectfully traverse the rejections of claims 1-22 under 35 U.S.C. §112, second paragraph, for the use of the terms 'purified water' and 'aging the composition'.

Please note that applicants maintain the term 'purified water' is not indefinite as the specification clearly teaches what is encompassed by the term 'purified water'. Specifically, the specification teaches at page 6, lines 6-23 that:

The water is preferably purified such that it contains very low concentrations of ions and other impurities, particularly calcium ions, magnesium ions, and silicon. This is desirable because impure water contributes to ashing and engine deposit problems after long-term use, which can lead to wear, corrosion, and

engine failure. The purified water preferably contains no greater than about 50 parts per million calcium and magnesium ions, and no greater than about 20 parts per million silicon. More preferably, the purified water has a total hardness of less than 10 parts per million and contains no greater than about 2 parts per million calcium and magnesium ions, and no greater than about 1 part per million silicon. Suitable purification techniques are well-known and include distillation, ion exchange treatment, and reverse osmosis, with reverse osmosis being preferred.

In addition, applicants maintain the term 'aging the composition' is not indefinite as the specification clearly teaches what is encompassed by the term. Specifically, the specification teaches:

The preferred embodiment of the blending system 12 operates using a three-minute aging time for the aqueous fuel emulsion. In other words, a blending system operating at an output flow rate of about 15 gallons per minute would utilize a 45-gallon tank as an aging reservoir. (See Page 15, lines 26-32).

After all components are mixed, the composition is aged prior to passing it through a shear pump. The aging time is temperature dependent. The resulting emulsion is a micro-emulsion having an average droplet size of about 1 micron or less. (See page 4, lines 7-11).

For these reasons, the rejections of claims 1-22 under 35 U.S.C. §112, second paragraph, should be withdrawn.

Traversal of Rejections under 35 U.S.C. §103(a)

Applicants respectfully traverse the rejections under 35 U.S.C. §103(a). It has long been established that in determining the obviousness of an invention, the Examiner must ascertain the scope and content of the prior art and the differences between the prior art and the claims that issue. If the differences between the subject matter sought to be patented in the prior art are such that the subject matter as a whole would not have been obvious to a person of skill in the art and a prima facie case of obviousness does not exist and the obviousness rejection under 35 U.S.C. §103(a) is improper.

The basic problem with the obviousness rejections is that the Examiner has improperly

characterized the primary reference and has completely ignored the process limitations included in the present claims. The differences between the present invention, as claimed, and the primary reference includes: the fuel application, the water, the content and general proportions of the surfactant package, the general proportions of primary surfactant; the general proportions of the polymeric dispersant and block co-polymer; as well as the fuel droplet size of the fuel emulsion.

For example, various claims of the present invention recite about 0.3 to 1.0 percent of a surfactant package whereas Dubin teaches 0.5 to 5.0 weight percent of an emulsification system. In addition, various claims of the present invention claims about 4000 to 6000 ppm (0.4-0.6%) percent of a primary surfactant and 1000 -5000 ppm (0.1-0.5%) of a block co-polymer whereas the Dubin reference teaches 0.125 - 4.25 weight percent of primary surfactant and 0.167 - 2.0% of a block co-polymer. While there may be some overlap in the specified ranges, the teachings associated with each limitation and with the subject matter as a whole, when properly construed, represent patentable differences between the present claims and the Dubin teachings.

Likewise, various claims of the present invention recite about 100 - 1000 ppm (0.01-0.1%) percent of a polymeric dispersant whereas Dubin teaches 0.025 - 1.25 weight percent of a polymeric dispersant. Finally, the present invention also claims an average droplet size of about 1 micron or less whereas Dubin teaches a droplet size of below about 5 microns. Again, these differences, when properly construed and taken as a whole, represent clear differences between the present claims and the Dubin teachings.

With regard to the droplet size difference, does the Examiner take the position that 70% of the droplets are below about 5 microns as recited in Dubin is the same as an average droplet size of about 1 micron or less? Applicants maintain these two statements

are different. In fact, just the different droplet size distributions represent a patentable difference, alone or in combination with the numerous other differences.

It is Applicant's position that the above-described differences clearly distinguish the present invention from the teachings and disclosure of Dubin. Many of the constituent percentages included in the present claims are below that of, or at the very low end of the theorized corresponding ranges included in the Dubin reference.

Other important differences include the water purity and the fuel application, just to name a few. In light of these differences, is the Examiner alleging that demineralized water is the same as purified water?; or that a reciprocating engine is the same as a gas turbine? If so, Applicants kindly request an affidavit from the Examiner on these points or other document which suggests that demineralized water and purified water are the same and/or that a reciprocating engine is equivalent to a gas turbine, or that such differences are immaterial to the invention, (a statement that applicants would refute).

In addition, the secondary reference, Cemenska et al., is believed to be an improper prior art reference under 35 USC 102(e). The enclosed declaration is respectfully submitted to show the invention claimed in the present application was made before the effective date of the Cemenska et al. reference and that the Cemenska et al. reference is not prior art under 35 U.S.C. 102(e). It is respectfully submitted that the submitted affidavit overcomes the 35 U.S.C. 103(a) rejections that cite the Cemenska et al. Reference.

Double Patenting Rejection

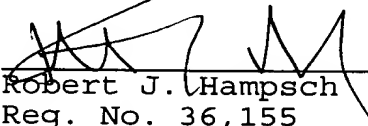
Applicants acknowledge the similarities between the present claims and the claims of co-pending Application No. 09/109,028 that forms the basis of the provisional rejection under the judicially created

doctrine of double patenting. Applicants will submit a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) upon the indication of allowable subject matter in the present claims or upon the issuing of patent claims in the co-pending Application No. 09/109,028. Be advised however, that the filing dates of both the present Application as well as co-pending Application No. 09/109,028 are identical (July 1, 1998) and therefore there is no patent term to disclaim.

In view of the above, applicants submit that claims 1-22 are now in condition for allowance and prompt and favorable action is earnestly solicited. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned attorney so that such issues are resolved as expeditiously as possible.

No new matter has been added and the changes to the claims are directed to subject matter that was previously disclosed in the specification or readily known to those skilled in the art. Likewise, no new fees are required since the number of independent claims and the number of total claims pending after this amendment do not exceed the number previously paid for.

Respectfully submitted,


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